

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification on pages 1 and 5, paragraphs [0001] and [0014] have been amended. Replacement paragraphs are included.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claims 1-21 are now pending in this application.

Rejection under 35 U.S.C. 102(b)

In the Office Action, Claims 1-21 were rejected under 35 U.S.C. 102(b) as being anticipated by Liebmann (U.S. Patent No. 6,057,063). Applicants respectfully traverse the rejection. Liebmann fails to disclose, suggest, or teach the claimed invention as recited in claims 1-21, as amended.

Independent claims 1, 10, 14, and 19 all require, in some form, a boundary phase region or a phase boundary region. As an example, the specification in the present application states: "Phase 180 boundary regions 240 can be formed outside edges of defined phase 180 regions 220 that are not defining the poly pattern." (Present application, Para. [0033].) These boundary phase regions are not disclosed, suggested, or taught by Liebmann.

Claim 1 recites:

defining a **boundary phase region** along the identified edges of the first phase region.

Claim 10 recites:

constructing a **boundary phase region** outside of at least one the edges of the phase areas.

Claim 14 recites:

defining a **first phase boundary region** around the defined edges of the first phase area; and

defining a **second phase boundary region** around at least a portion of the defined edges of the second phase area.

Claim 19 recites:

a **first boundary phase region** located outside second edges of the phase 180 region, the second edges of the phase 180 region being different than the first edges of the phase 180 region, wherein the first boundary phase region includes an opaque material; and

a **second boundary phase region** around at least a portion of second edges of the phase 0 region, the second edges of the phase 0 region being different than the first edges of the phase 0 region.

As described by the Applicants in the present application, the “boundary regions” are located along the outside edges of phase regions that help define critical areas. They are **not** on opposite sides of features requiring phase shifting. For example, in Paragraph [0033] of the present application, “phase 180 regions 220 and phase 0 regions 230 help to define poly regions 210.” The outside edges of phase 180 regions 220 that do not define the poly pattern are the edges where the boundary regions are formed. (See Paragraph [0033] and Fig. 2.)

In the Office Action, the Examiner lists the steps taught by Liebmann, including “identifying features in the mask that require phase shifting” and “creating generic phase regions on opposite sides of the features that require phase shifting.” However, not one of the steps mentioned by the Examiner involves the use of boundary regions.

Figures 3 and 4 of Liebmann shows how Liebmann “deals with edges of phase regions.” (Col. 8, lines 49-50.) Liebmann does not create boundary regions, as recited by the Applicant’s claims, but rather Liebmann creates “fill shapes to occupy gaps of smaller than specified widths between phase regions.” (Col. 8, lines 60-61.) These fill shapes in Liebmann are given the same phase characteristics as the regions they are adjacent to, but do not extend along the edges of the phase regions that do not define the critical area. That is, the fill areas simply fill small gaps between phase regions.

Anticipation of a claim by a prior art reference requires that the reference disclose each and every limitation in the claim. Liebmann does not teach the boundary regions recited by Applicant’s claims. Further, Liebmann fails to disclose forming boundary regions “along the identified edges” (claim 1), “outside of at least one the edges of the phase areas” (claim 10), “around the defined edges” (claim 14), or “outside [the] edges of the phase 180 region” (claim 19). Accordingly, the rejection under 35 U.S.C. §102(b) of claims 1-21 based on Liebmann cannot be properly maintained. Applicants respectfully request the withdrawal of the rejection.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Applicants believe no fee is due for this submission, however, the Commissioner is hereby authorized to charge any fees due in connection with this submission to Deposit Account No. 50-2350. Duplicate copies of pages 1, 9 and the signature page of this Reply are enclosed for such purposes. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2350. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2350.

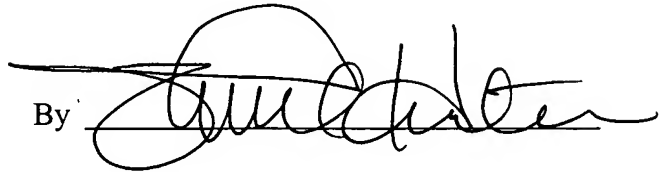
Application No. 10/016,441

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Respectfully submitted,

Date December 29, 2003

By

A handwritten signature in black ink, appearing to read "Paul S. Hunter", written over a horizontal line.

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